



**GIA**<sup>®</sup>  
Diamond  
Origin

RUSSIA



## Billion Years

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More than a billion years ago, 100 miles (161 km) or more beneath the earth's surface, in a cauldron of extreme temperatures and high pressure, carbon atoms bonded tightly together. At temperatures higher than 2100°F (1150°C) and pressures 45,000 times greater than at sea level, crystals formed, resulting in the hardest natural mineral on Earth: diamond.

Diamonds remained hidden deep within the earth for hundreds of millions of years, until volcanic activity violently transported them upwards towards the earth's surface in magma. Vertical rock formations, called "kimberlite pipes," are remnants of these ancient volcanoes. Erosion subsequently frees rough diamonds from their host rock to be transported by rivers and deposited sometimes at great distances, from their original source. Miners in places like India and Brazil would uncover them in alluvial deposits. Today, most diamonds are found in kimberlite pipes, which are the primary source of mined diamonds.

The discovery of a kimberlite pipe in South Africa in 1869 marks the beginning of the modern diamond industry. With it came the development of mining operations that produce tens of millions of carats of rough diamonds each year – that includes a major discovery in Botswana in 1967, as well as other areas of Africa, Australia, Siberia and the Northwest Territories of Canada.



## Incredible Birth

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Russia is the world's largest diamond-producing nation by volume, with 42 deposits in operation – 16 primary sources and 26 alluvial sites – yielding over 40 million carats of rough diamonds each year. Approximately 90% of Russia's diamonds are mined in the province of Sakha near the Arctic Circle. A newly discovered site near the port of Arkhangelsk in the far northwestern portion of the country has also been developed.

Although geologists long-suspected the existence of diamond deposits in Russia, their suspicions were not confirmed until the mid-1950s when a small team of geologists, headed by Larisa Popugaeva, found kimberlite in a remote and forbidding region of Siberia. In this once barren region, a community grew, and today the mining town of Mirny boasts a population of around 40,000, with an entire infrastructure supported by the diamond industry. Though Mirny had emerged as a mining town, it has evolved into a modern center of economic and cultural activity in Western Yakutia.

The country's diamond industry was reorganized in 1991 when the diamond-producing province of Sakha (formerly Yakutia) became a semi-independent state. In 1992, the government created a new diamond administration agency. This organization, with the majority of shares held between the government in Moscow and the provincial government in Yakutsk, was named Alrosa.

A scenic landscape featuring a range of snow-capped mountains under a blue sky with light clouds. In the foreground, a calm lake perfectly reflects the mountains and sky. A small, snow-covered rock is visible in the water. The overall atmosphere is serene and majestic.

## Transformation Journey

The transformation of diamond rough into polished stones requires a blend of old-world craftsmanship and high-tech tools. Today, Surat, India is the primary diamond cutting and polishing center. Other cutting centers historically have included New York, Antwerp and Tel Aviv.

The hardness of the material requires highly trained artisans who use specialized saws, laser equipment and polishing tools to complete the task in stages. Traditionally, cutters fashioned the rough into a finished stone by hand. Today, computer imaging and lasers aid the cutter in revealing the stone's beauty. First, the diamond cutter must assess the rough to determine how to cut the most beautiful diamond – or diamonds, as one piece of rough can yield multiple finished diamonds. To achieve the greatest yield, each cutter must decide whether a round, rectangular, pear, marquise or square gem can best be fashioned from the rough. The gem's sparkle is unleashed through a series of processes including shaping, faceting and polishing.

GIA and other diamond grading laboratories evaluate the quality of polished diamonds using the 4Cs of Diamond Quality (Color, Clarity, Cut and Carat Weight), the international standard created by GIA, and issue grading reports documenting their assessment. The GIA Diamond Origin Report for your diamond includes this independent and objective analysis in addition to confirming the country of its origin.

## Doing Good

Mirny is a remote Siberian town located well above the tundra line in the sub-arctic. The area's largest employer, the diamond producer Alrosa, donates the equivalent of \$4 million USD each year to make sure children in the area receive a quality education. This is the single largest source of revenue for the schools in that difficult-to-access area.

The mining industry contributes about 3% of its annual revenue to social projects. As a long supporter of local communities, it generously contributes to the development of not only education, but healthcare, culture and sports. Miners help organize and sponsor charity events for students of local districts making community responsibility one of their company pillars.





## Doing Good

Russia and Alrosa were charter adopters of the Kimberley Process. Since its 2013 reorganization into a public company, it has developed its own set of best business practices. It pays wages and benefits well above average and has enacted state-of-the-art safety policies at its mines. Alrosa also has taken measures to increase the transparency of its operations by publishing detailed annual reports and working with the diamond industry worldwide to promote sales of diamonds mined by ethical producers.

Russia also has an emerging diamond cutting industry, accounting for thousands of additional jobs in cities like Smolensk and Vladivostok, further contributing to the economy and well-being of the people of Russia. Diamond industries in both the rough and polished sectors contribute greatly to Russia's economy, supporting education and healthcare throughout the country and helping to protect and preserve the environment in mining communities.



Every diamond has a story. Now make this story part of your own.

## About GIA

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The Gemological Institute of America® is internationally recognized as the leader in gem research, education and laboratory services. Committed to protecting all purchasers of gemstones and jewelry, the Institute developed the International Diamond Grading System™ and the 4Cs of Diamond Quality, and continues to set the standard for grading and identification practices used all over the world.



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